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ABSTRACT

The first part of this document is a fact sheet that provides information on health hazards faced by employed women. It covers the Occupational Safety and Health Act (OSHA), job-related diseases suffered by workers in female-dominated occupations, employer responsibilities under OSHA, and the lack of statistical reporting on job-related disease. These concerns specifically related to female workers are addressed: women workers' vulnerability to work-related stress, hazards of working with video display terminals, industry policies that bar women of childbearing age from jobs that expose them to reproductive hazards, and health hazards to women in nontraditional jobs. The second part of this document is an article that is a reponse to public interest in the particular health hazards encountered by cosmetologists and beauticians. It summarizes several studies on health hazards, identifies toxic substances, discusses the validity of research, and looks at government agencies and their guidelines and/or regulations. The responsibilities and roles of trade associations, union activity in the area of health and safety, and the need for investigation are also considered. (YLB)

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WOMEN, WORK AND HEALTH HAZARDS

A FACT SHEET

and

COSMETOLOGISTS: HEALTH RISKS AT WORK

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National Commission on Working Women

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Women, Work and Health Hazards

A Fact Sheet

In 1983, 62 percent of women aged 16 to 64 were in the workforce—a total of 49 million.

Approximately 80% of women who work outside the home are in clerical, sales, service, factory or plant jobs. According to the Department of Labor, women workers in 1983 were divided into the following occupational categories:

Managerial and Professional	21.9%
Technicians	3.3%
Sales	12.8%
Administrative support, including clerical	29.7%
Private Household	2.1%
Service	16.8%
Craft	2.3%
Operatives	9.7%
Farm	1.3%

In 1970, Congress passed legislation called the Occupational Safety and Health Act which created a new agency, the Occupational Safety and Health Administration (OSHA), within the Department of Labor.

The purpose of the law was to "assure, so far as possible, safe and healthful working conditions to every employee in America, and to preserve this country's human resources." OSHA sets minimum health and safety standards for workplace conditions; these standards have the force of law. However, the agency is very small—it currently employs only 1,200 inspectors for over five million workplaces. Such a small staff is inadequate to the task of overseeing conditions in so many worksites, especially in the face of new industrial development and technology.

Workers in female-dominated occupations suffer many job-related diseases.

Beauticians suffer a higher incidence of breast and genital cancer and cancer of the digestive and respiratory system than the overall female population. They also have higher rates of toxemia during pregnancy and suffer more miscarriages and premature deliveries. Garment workers, cashiers, secretaries, and food service workers risk developing carpal tunnel syndrome, an inflammatory disease affecting the hand, wrist and forearm which is caused by repeated, forceful flexing of the wrists. Meat wrappers, who are predominantly female, suffer from skin diseases and the risk of asthma.

Employers have certain responsibilities under the Occupational Safety and Health Act of 1970.

Employers must provide a workplace free from recognized hazards that cause or are likely to cause death or serious physical harm to employees; and they must comply with the standards, rules and regulations issued under the Occupational Safety and Health Act of 1970. These rules include informing all employees about OSHA; making sure employees have and use safe tools and equipment (including personal protective equipment) that are properly maintained; keeping OSHA-required records of work-related injuries and illnesses; and providing employees, former employees, and their representatives access to the Log and Summary of Occupational Injuries and Illnesses.

Employees also have responsibilities under the Act. The law states that each employee "shall comply with all occupational health and safety standards and all rules, regulations and orders issued under the Act that are applicable."

The U.S. Public Health Service estimates that at least 30 percent of all disease in the United States is job-related, affecting an estimated 390,000 American workers. However, the government collects no data identifying working women's health hazards.

With the exception of work-related injuries, statistical reporting of occupational health is inadequate, often unreliable, and does not reflect the number of workers suffering from work-related illness. Chronic or long-latent diseases are the most likely to go unreported. Also, there are no occupational illness statistics recorded by sex, making it impossible to calculate the number of women suffering work-related disease or to identify the more hazardous female occupations. Since there is an overall lack of statistical information, it is difficult to identify hazardous workplaces which most need enforcement of occupational health laws.

As defined by OSHA, an occupational illness is an abnormal condition or disorder caused by exposure to environmental factors associated with employment.

This definition includes acute and chronic illnesses which may be caused by inhalation, absorption, ingestion, or direct contact with toxic substances or harmful agents. Employers with 11 or more workers are required to maintain records of occupational illnesses as they occur.

Women workers are vulnerable to work-related stress, recognized as a leading cause of many diseases.

Job-related stress falls into four basic categories:

- **Physical:** Involving poor equipment, inadequate lighting, excessive noise, etc.
- **Economic:** Involving low pay, lack of equal pay for equal or comparable work, lack of job mobility, occupational tracking, and the dual role of wage-earner/homemaker affecting working mothers.
- **Personnel Practices:** Involving work underload/work overload, pace of work, compulsory overtime, lack of control over work schedule.
- **Social Relationships:** Involving exposure to discrimination and sexual harassment. Secretaries, in particular, suffer from being an office wife/servant/therapist.

It has been established that working with video display terminals (VDTs) can be hazardous to workers' health (National Academy of Sciences, July 1983).

Complaints of backache, eyestrain and general fatigue among operators of the nearly 10 million VDTs currently in use in the U.S. were found by a government study to be valid. Probable causes of discomfort were: poorly designed equipment and work stations, improper lighting (standard office lighting needs adaptation for VDT work), and the nature of the work (usually clerical) that requires prolonged sitting in one position only, which strains back and leg muscles.

The possibility of low-level radiation leakage from VDTs has been studied by the National Institute of Occupational Safety and Health (NIOSH). Although it issued a report that no evidence of radiation hazards had been found, NIOSH has recently set up a new study of radiation hazards, the results of which will be known in two years.

Some industries have adopted policies that bar women of childbearing age from jobs that would expose them to reproductive hazards.

Many of these industries, which have been male-dominated, exclude recently hired women, some from the ages of 16 through 50, from certain jobs. The legal rights of these women who are denied access to particular jobs by a company's exclusionary policies are unclear and relatively untested.

However, there are industries employing a large female workforce that do not exclude women of childbearing age from jobs which could endanger a fetus. For example, although it is known that exposure to anesthetic gases can cause spontaneous abortions, female nurses and technicians have not been banned from operating rooms.

Instead of industry adoption of exclusionary policies, occupational health experts recommend that conditions hazardous to male and female reproduction systems be eliminated, thus protecting the reproductive health of both sexes.

Women constitute half of the 12 million workers currently employed in the nation's plants and factories.

A vast majority of workers in apparel (995,000) and textile production (409,000) and in the newer electronics industries (890,000) are female. Approximately 1.4 million women work in the plastics, chemical, rubber and machinery industries. Women represent one-third of all furniture workers, and approximately 100,000 women work in the automotive industry.

Women in non-traditional jobs are exposed to health hazards stemming from a lack of properly designed protective equipment, clothing, and tools.

Respirators are now on the market which correctly fit the smaller faces of women; however, some companies still force their women workers to wear larger size respirators designed for men. Consequently, these women are overexposed to hazardous substances, and at the same time, suffer the strain of wearing ill-fitting respirators. It is a critical safety issue that women be provided with properly fitting equipment, such as hard hats, safety shoes and gloves. Otherwise, such equipment is ineffective and may be hazardous.

Ergonomics is a new science that explores the interaction between workers and their environment and promotes workplace design conducive to the overall physiological and emotional well-being of the worker.

A correctly designed work environment can prevent occupational disease, alleviate stress and increase worker productivity. Some factors considered in the design of healthy workplaces include: the specific movements required to complete an assembly line task, the amount of glare generated by a VDT screen, and the design of office furniture and lighting.

VDT operators, who perform mostly clerical work, suffer from stress caused by rigid work procedures, high production standards, constant pressure for performance, little control over their own tasks, and minimal participation or identification with their end-product.

A June 1981 study by NIOSH compared stress levels of VDT operators with those of professional workers who used VDTs for the same length of time each day. The professionals, who had a great deal of flexibility in establishing their own work patterns in order to meet deadlines, suffered far less stress and strain than the VDT operators.



COSMETOLOGISTS: HEALTH RISKS AT WORK

by Gail Still

In 1984, the National Commission on Working Women released a report entitled, "Caution: Your Work May be Hazardous to Your Health," a survey of women's occupational health hazards in four major female-dominated job categories: clerical work, sales work, service work and plant and factory work. The following article is a response to public interest in the particular health hazards encountered by cosmetologists and beauticians.

There are 625,000 licensed cosmetologists and barbers in the United States today. Of that number 513,000 are cosmetologists and 112,000 are barbers. Women constitute 91.2 percent of the cosmetologist population and 2 percent of the barber population. Both cosmetologists and barbers must meet the same standards for licensing, although these standards vary from state to state. Generally, a person must graduate from a state-approved cosmetology or barber school, be at least 16 years of age and pass a state-administered examination which demonstrates both the students' knowledge and skill of the trade.

Once licensed, barbers and cosmetologists provide the public with the same basic services. They cut, trim, shampoo, straighten, wave, color and style the hair. In addition, barbers offer hair and scalp treatments, shaves and facial massages, while cosmetologists offer manicures, pedicures, facials and make-up analysis.

Both barbers and cosmetologists face a variety of health hazards stemming from exposure to chemicals in the hair dyes, shampoos, and permanent wave and straightening lotions that they use in their work. There is a good deal of controversy concerning worker safety and protection from these hazardous materials. Some diseases resulting from chemical exposure, particularly those of the skin and lungs, tend to appear within a reasonably short period of time and have been relatively well-documented. However, diseases that involve reproductive problems and certain kinds of cancer often develop after a long incubation period and, as a consequence, tend to be less well-documented.

Data on cosmetologists' occupational health have generally come from a variety of sources and scattered studies rather than from a central clearinghouse or government agency. Little health research has been conducted on this occupational category as a whole, particularly with regard to the long-term health effects of daily exposure to chemicals known to be toxic.

STUDIES

In a study conducted by Guidotti Sylvania, Dr. William E. Wright, and Dr. John M. Peters, data in a Los Angeles population-based cancer registry called the Cancer Surveillance Program were analyzed according to occupation and industry. When the data on barbers and cosmetologists were examined, the study documented their exposure to a number of chemicals that produce genetic mutations in bacteria. The study also found that the number of cases of multiple myeloma, cancer of the bone marrow, were excessive for females who were cosmetologists, hairdressers and manicurists.

In 1975 Dr. Bruce Ames, a biologist at the University of California in Berkeley, and some colleagues tested 18 chemical ingredients found in 150 of 169 selected hair dye products. When tested, they found nine of the 18 chemicals caused genetic mutation in bacteria. This is significant because according to researchers animal bacteria is made out of the same properties as human bacteria. Since this genetic mutation can be a precursor to cancer, such chemicals are potentially dangerous: they are capable of changing the properties of cells, which can result in uncontrolled replication. Although not everyone exposed to such chemicals will get cancer, the longer one is exposed or the greater the exposure, the more likely it is the cancer will develop.

TOXIC SUBSTANCES

Many substances used in the manufacture of hair dyes enter the body when applied to the skin. Coloring agents in hair dyes have long been known to be absorbed through the skin into body fluids, and many of these dyes, including some suspected carcinogens, are found in the urine of users. This is a significant finding because in their work hairdressers are exposed to hair dyes daily and often do not use gloves to protect themselves.

In fact, one chemical in hair dyes has caused researchers such great concern that it is now banned from use. The chemical is 4 methoxy-m-phenylenediamine (4MMPD), also known as 2,4 diaminonitrobenzene (2,4 DAA). It is found in coal tars, which proved to be so carcinogenic in laboratory tests that the Food and Drug Administration (FDA) recommended in 1978 all dyes containing the chemical be labelled with a warning to consumers. As a result, manufacturers removed it from their pro-

ducts. Unfortunately, its replacement, 4-EMPDP, which is still being tested by the FDA, also seems to cause genetic mutation in bacteria.

Unfortunately, hair dyes are not alone in exposing the hairdresser to carcinogenic substances. Shampoos and permanent wave lotions have also been found to contain hazardous substances.

The chemical NDELA, found in many shampoos, belongs to a class of chemicals called nitrosamines, which have been proven to be carcinogenic in laboratory studies with animals. NDELA is not an original ingredient of shampoos, but is created by a chemical reaction taking place between an "amine" such as triethanolamine (TEA) or diethanolamine (DEA) and a "nitrosating agent" such as sodium nitrate.

In 1978 the FDA conducted a study which revealed NDELA contamination in half of 124 shampoo products tested. Two qualities which make NDELA contamination dangerous are:

1. Both TEA and DEA are readily absorbed into the bloodstream through the skin and do not have to be swallowed to cause genetic mutation.

2. Nitrosamine contamination seems to occur randomly, and although not all shampoos containing TEA and DEA are NDELA contaminated, there is no way for the user of these products to know which ones are safe.

Permanent waving lotions also contain DEA, TEA, and MEA which are used as PH adjusters. As in shampoos, they have the potential to form nitrosamines which are carcinogenic.

VALIDITY OF RESEARCH

The hair dye industry has challenged many studies which have negative findings, claiming a lack of validity in the laboratory methodology. For example, the industry points out that laboratory rats used in the experiments are directly fed high doses of hair dyes, rather than having the dyes applied to their skin. But many scientists contend that a carcinogen at high exposure levels will still be a carcinogen at low levels.

In defending the validity of laboratory experiments, the Environmental Defense Fund states the following in a report on hair dyes: Animals are fed high doses for three reasons:

1. to compensate for the short life span of animals compared to humans.
2. to compensate for the very fast metabolizing and excreting of chemicals by



animals compared to humans.

3. to compensate for the relatively small number of test animals used compared to the number of human beings exposed to the chemical.

GOVERNMENT AGENCIES

The Food and Drug Administration (FDA) is charged with the enforcement of the Food, Drug and Cosmetic Act of 1938. Under the Act, the regulations governing cosmetics are different from those governing drugs. According to FDA guidelines, cosmetics are defined as substances that can be "rubbed, poured, sprinkled or sprayed on, introduced into or otherwise applied to the human body for cleansing, beautifying, promoting attractiveness or altering the appearance without affecting the body's structure or function." However, a drug is defined as a substance that produces structural or functional changes, and is, therefore, subject to more stringent regulation.

The FDA requires drug manufacturers to test their products for safety before they market them. However, there is no requirement that cosmetics undergo pre-market testing. Any testing that is done is performed voluntarily by the manufacturers. As a result, the FDA has little information about the safety and effectiveness of cosmetics, and it can usually act only after a product is on the market and has been shown to be harmful or inaccurately labelled. Since products bought at the wholesale level by hairdressers and cosmetologists are not required to have any ingredient labelling at all, users are relatively unprotected.

The Occupational Safety and Health Administration (OSHA) within the Department of Labor was created in 1970 to reduce workplace hazards, conduct research, develop a record-keeping system to monitor job related injuries and illnesses, establish training programs, and enforce safety standards. The National Institute of Occupational Safety and Health (NIOSH) was formed at the same time to conduct research and make recommendations to OSHA.

Unfortunately, most of OSHA's regulations are directed towards large industries, leaving workers in small, independent businesses unprotected.

In recent years, OSHA has tended toward a loosening of regulations that affect workers in the cosmetics and beauty industries. For example, proposals have been made to limit employee access to medical

records kept by employers and also to loosen the requirements for the labelling of toxic substances, many of which are found in cosmetics. Not only does this hinder workers from obtaining correct medical treatments for work-related ailments, it also increases the likelihood of exposure to toxic chemicals by eliminating the only means of identifying such chemicals at the user level.

TRADE ASSOCIATIONS

Under FDA guidelines, the cosmetic industry has the responsibility of regulating itself. The *Cosmetic, Toiletry and Fragrance Association (CTFA)*, was formed in 1894 to serve the needs of both the industry and the consumer. It represents the cosmetic industry before federal, state, and foreign governments, and works to communicate the benefits of using the industries' products.

In the past decade, the CTFA created a Cosmetic Ingredient Review Panel to review and document the safety of ingredients used in cosmetics. The panel is composed of experts in the fields of dermatology, cosmetology, pharmacology, chemistry and toxicology, along with three non-voting members who represent the consumer, the cosmetic industry and the FDA.

According to CTFA, the panel has complete freedom to examine and assess the safety of cosmetic ingredients without industry review. Since its inception nine years ago, the CIR panel has compiled a list of approximately 2,800 cosmetic ingredients to be reviewed. The ingredients are listed in order of priority according to specific criteria such as: the frequency with which an ingredient appears in cosmetic products, the level of concentration of an ingredient, and the degree to which the ingredient is potentially biologically active. To date the panel has completed reviews of 218 ingredients; of that number they have classified one ingredient, p-Hydroxysanisole, as unsafe.

In assessing the safety of a product ingredient, the panel considers consumer use as a standard rather than hairdresser use. Therefore, it is the ingredient's effect on those who use it less frequently that is considered, rather than the effect on those whose exposure is prolonged or intense, such as cosmetologists and hairdressers.

The National Hairdressers and Cosmetologists Association was founded in 1921 to bring licensed cosmetologists together for educational and legislative purposes.

Until recently, there was little emphasis by the association on health hazards or product safety for members. However, the organization is now beginning to conduct seminars and publish literature on health and safety issues in an effort to educate its membership. Although this is a positive move, only 20 percent of all hairdressers belong to NHCA, greatly limiting its impact on workers.

UNION ACTIVITY

The Food and Allied Service Trades Department of the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) is the union that represents cosmetologists and barbers. Approximately 50,000 cosmetologists and barbers belong to the union, constituting 12.5 percent of all workers in their profession.

The union's major concerns are educating its membership about the health and safety aspects of the occupation and getting legislation passed to protect its members. To this end, the union has issued two publications, *Six Hair Raising Facts of Life* and *Staying Alive*, advising hairdressers of the hazards they face on the job. In addition, union representatives speak to local chapters on health and safety issues, such as proper ventilation, and urge workers to take precautions, such as wearing protective gloves, and other safety measures to prevent contact with dangerous substances.

In the latter part of the 1970's the union worked toward the passage of federal legislation that would give the FDA authority to ban coal tars, require mandatory pre-testing of all cosmetic products, and label all products used by hairdressers. However, this legislative effort was unsuccessful.

NEED FOR INVESTIGATION

The public has already recognized the need for scientific investigation and reliable information concerning hazardous and toxic chemicals in our environment. This need is acute for those whose work causes them to be exposed to health-threatening substances on a daily basis. It is important for workers to become educated in matters of occupational health and that effective and enforceable legislation be developed to safeguard workers' health.

The cosmetologists and barbers of this country, large numbers of whom are women, clearly run the risk of occupational health disease caused by toxic chemical exposure. They need and deserve better information and better protection.